

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A semiconductor device comprising:

- an active matrix circuit having at least one first thin film transistor formed over a substrate; and
- a driving circuit having at least one second thin film transistor formed over the substrate for driving said active matrix circuit, each of said first and second thin film transistors comprising:
 - a gate electrode;
 - a gate insulating film adjacent to the gate electrode; and
 - a semiconductor film adjacent to said gate insulating film wherein said semiconductor film includes a channel forming region, a pair of first regions containing an impurity for giving one conductivity type thereto with said channel forming region therebetween, and a pair of second regions in which a concentration of said impurity is smaller than that in said first regions wherein said second regions are interposed between said channel forming region and said pair of first regions,

wherein the pair of second regions of said second thin film transistor are overlapped with the gate electrode of said second thin film transistor;

wherein a distance between edges of the channel forming region and edges of the pair of first regions of said first thin film transistor is greater than that of said second thin film transistor.

2. (Previously Presented) A semiconductor device according to claim 1 wherein said semiconductor film comprises crystalline silicon.

3. (Previously Presented) A semiconductor device according to claim 1 wherein said impurity is selected from the group consisting of phosphorus and boron.

4. (Previously Presented) A semiconductor device according to claim 1 wherein said gate electrode is located over said semiconductor film.

5. (Previously Presented) A semiconductor device according to claim 1 wherein said gate electrode comprises a multi-layered structure including first and second layers, each of which comprises a material selected from the group consisting of aluminum, tantalum, titanium and silicon.

6. (Currently Amended) A semiconductor device comprising:

an active matrix circuit having at least one first thin film transistor formed over a substrate; and

DI a driving circuit having at least one second thin film transistor formed over the substrate for driving said active matrix circuit, each of said first and second thin film transistors comprising:

gate electrode;

a gate insulating film adjacent to the gate electrode; and

a semiconductor film adjacent to said gate insulating film wherein said semiconductor film includes a channel forming region, a pair of first regions containing an impurity for giving one conductivity type thereto with said channel forming region therebetween, and a pair of second regions in which a concentration of said impurity is smaller than that in said first regions wherein said second regions are interposed between said channel forming region and said pair of first regions,

wherein the pair of second regions of said second thin film transistor are overlapped with the gate electrode of said second thin film transistor and a distance between the channel forming region and the pair of first regions in said first thin film transistor is within a range of 0.4 to 2 μm ;

wherein a distance between edges of the channel forming region and edges of the pair of first regions of said first thin film transistor is greater than that of said second thin film transistor.

7. (Previously Presented) A semiconductor device according to claim 6 wherein said semiconductor film comprises crystalline silicon.

8. (Previously Presented) A semiconductor device according to claim 6 wherein said impurity is selected from the group consisting of phosphorus and boron.

9. (Previously Presented) A semiconductor device according to claim 6 wherein said gate electrode is located over said semiconductor film.

D 10. (Previously Presented) A semiconductor device according to claim 6 wherein said gate electrode comprises a multi-layered structure including first and second layers, each of which comprises a material selected from the group consisting of aluminum, tantalum, titanium and silicon.

11. (Currently Amended) A semiconductor device comprising:

an active matrix circuit having at least one first thin film transistor formed over a substrate; and

a driving circuit having at least one second thin film transistor formed over the substrate for driving said active matrix circuit, each of said first and second thin film transistors comprising:

a gate electrode;

a gate insulating film adjacent to the gate electrode; and

a semiconductor film adjacent to said gate insulating film wherein said semiconductor film includes a channel forming region, a pair of first regions containing an impurity for giving one conductivity type thereto with said channel forming region therebetween, and a pair of second regions in which a concentration of said impurity is smaller than that in said first regions wherein said second regions are interposed between said channel forming region and said pair of first regions,

an insulating film comprising silicon oxide over the gate electrode;

wherein the pair of second regions of said second thin film transistor are overlapped with the gate electrode of said second thin film transistor and a distance

between edges of the channel forming region and edges of the pair of first regions in said first thin film transistor is greater than that of said second thin film transistor.

12. (Previously Presented) A semiconductor device according to claim 11 wherein said semiconductor film comprises crystalline silicon.

13. (Previously Presented) A semiconductor device according to claim 11 wherein said impurity is selected from the group consisting of phosphorus and boron.

14. (Previously Presented) A semiconductor device according to claim 11 wherein said gate electrode is located over said semiconductor film.

D 15. (Previously Presented) A semiconductor device according to claim 11 wherein said gate electrode comprises a multi-layered structure including first and second layers, each of which comprises a material selected from the group consisting of aluminum, tantalum, titanium and silicon.

16. (Currently Amended) A semiconductor device comprising:
an active matrix circuit having at least one first thin film transistor formed over a substrate; and

a driving circuit having an inverter circuit comprising at least a second and third thin film transistors formed over the substrate for driving said active matrix circuit, at least one of said second and third thin film transistors comprising:

a gate electrode;

a gate insulating film adjacent to the gate electrode; and

a semiconductor film adjacent to said gate insulating film wherein said semiconductor film includes a channel forming region, a pair of first regions containing an impurity for giving one conductivity type thereto with said channel forming region therebetween, and a pair of second regions in which a concentration of said impurity is smaller than that in said first regions wherein said second regions are interposed between said channel forming region and said pair of first regions,

wherein the pair of second regions are overlapped with the gate electrode of said second thin film transistor;

wherein a distance between edges of the channel forming region and edges of the pair of first regions of said first thin film transistor is greater than that of said second thin film transistor.

17. (Previously Presented) A semiconductor device according to claim 16 wherein a width of the pair of second regions between the channel forming region and the pair of first regions in said first thin film transistor is within a range from 0.4 to 2 μm .

DI 18. (Previously Presented) A semiconductor device according to claim 16 wherein a width of the pair of second regions between the channel forming region and the pair of first regions in said first thin film transistor is different from that of said second and third thin film transistors.

19. (Currently Amended) A semiconductor device comprising:

an active matrix circuit having at least one first thin film transistor formed over a substrate;

a driving circuit having an inverter circuit comprising at least a second and third thin film transistors formed over the substrate for driving said active matrix circuit, at least one of said second and third thin film transistors comprising:

a gate electrode;

a gate insulating film adjacent to the gate electrode; and

a semiconductor film adjacent to said gate insulating film wherein said semiconductor film includes a channel forming region, a pair of first regions containing an impurity for giving one conductivity type thereto with said channel forming region therebetween, and a pair of second regions in which a concentration of said impurity is smaller than that in said first regions wherein said second regions are interposed between said channel forming region and said pair of first regions,

wherein the pair of second regions are overlapped with the gate electrode of said second thin film transistor and a distance between edges of the channel forming

region and edges of the pair of first regions in said first thin film transistor is within a range of 0.4 to 2 μm ;

wherein a distance between edges of the channel forming region and edges of the pair of first regions of said first thin film transistor is greater than that of said second thin film transistor.

20. (Previously Presented) A semiconductor device according to claim 19 wherein said semiconductor film comprises crystalline silicon.

21. (Previously Presented) A semiconductor device according to claim 19 wherein said impurity is selected from the group consisting of phosphorous and boron.

22. (Previously Presented) A semiconductor device according to claim 19 wherein said gate electrode is located over said semiconductor film.

23. (Previously Presented) A semiconductor device according to claim 19 wherein said gate electrode comprises a multi-layered structure including first and second layers, each of which comprises a material selected from the group consisting of aluminum, tantalum, titanium and silicon.

24. (Previously Presented) A semiconductor device according to claim 19 wherein said impurity is contained in said pair of first regions in a concentration within a range from 1×10^{20} to 2×10^{21} atoms/cm³.

25. (Previously Presented) A semiconductor device according to claim 19 wherein said impurity is contained in said pair of second regions in a concentration within a range from 1×10^{17} to 2×10^{18} atoms/cm³.

26-33 (Canceled)

34. (Previously Presented) A semiconductor device according to claim 1 wherein the concentration of said impurity in said first regions is within a range from 1×10^{20} to 2×10^{21} atoms/cm³ while the concentration of said impurity in said pair of second regions is within a range from 1×10^{17} to 2×10^{18} atoms/cm³.

35. (Previously Presented) A semiconductor device according to claim 6 wherein the concentration of said impurity in said first regions is with a range from 1×10^{20} to 2×10^{21} atoms/cm³ while the concentration of said impurity in said pair of second regions is within a range from 1×10^{17} to 2×10^{18} atoms/cm³.

1D' 36. (Previously Presented) A semiconductor device according to claim 11 wherein the concentration of said impurity in said first regions is within a range from 1×10^{20} to 2×10^{21} atoms/cm³ while the concentration of said impurity in said pair of second regions is within a range from 1×10^{17} to 2×10^{18} atoms/cm³.

37. (Currently Amended) A semiconductor device comprising:
at least one first thin film transistor formed over a substrate;
a pixel electrode electrically connected to said first thin film transistor;
a driving circuit having at least one second thin film transistor formed over the substrate for driving first thin film transistor, each of said first and second thin film transistors comprising:

a gate electrode;

a gate insulating film adjacent to the gate electrode; and

a crystalline semiconductor film adjacent to said gate insulating film

wherein said crystalline semiconductor film includes a channel forming region, a pair of first regions containing an impurity for giving one conductivity type thereto with said channel forming region therebetween, and a pair of second regions in which a concentration of said impurity is smaller than that in said first regions wherein said second regions are interposed between said channel forming region and said pair of first regions,

wherein the pair of second regions of said second thin film transistors are

overlapped with the gate electrode of said second thin film transistor;

wherein a distance between edges of the channel forming region and edges of the pair of first regions of said first thin film transistor is greater than that of said second thin film transistor.

38. (Previously Presented) The semiconductor device according to claim 37 wherein said gate electrode is located over said crystalline semiconductor film in said first and second thin film transistors.

39. (Previously Presented) The semiconductor device according to claim 37 wherein said second impurity regions contain one of carbon, nitrogen and oxygen at a higher concentration than said first impurity region.

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40. (Canceled)

41. (Previously Presented) The semiconductor device according to claim 37 wherein said impurity is phosphorus.

42. (Currently Amended) A semiconductor device comprising:

an active matrix circuit having at least one first thin film transistor formed over a substrate; and

a driving circuit having at least one second thin film transistor formed over the substrate for driving said active matrix circuit, each of said first and second thin film transistors comprising:

a gate electrode;

a gate insulating film adjacent to the gate electrode; and

a semiconductor film adjacent to said gate insulating film wherein said semiconductor film includes a channel forming region, a pair of first regions containing an impurity for giving one conductivity type thereto with said channel forming region therebetween, and a pair of second regions in which a concentration of said impurity is

smaller than that in said first regions wherein said second regions are interposed between said channel forming region and said pair of first regions,

an insulating film comprising silicon nitride over the gate electrode;

wherein the pair of second regions of said second thin film transistor are overlapped with the gate electrode of said second thin film transistor;

D' wherein a distance between edges of the channel forming region and edges of the pair of first regions of said first thin film transistor is greater than that of said second thin film transistor.
